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USE OF EXIT CRITERIA FOR MAJOR DEFENSE SYSTEMS

Report No. D-2001-032

January 10, 2001

Office of the Inspector General  
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### **Acronyms**

CARS  
DAES  
MIDS-LVT  
OSD

Consolidated Acquisition Reporting System  
Defense Acquisition Executive Summary  
Multifunctional Information Distribution System-Low Volume Terminal  
Office of the Secretary of Defense



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
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January 10, 2001

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION,  
TECHNOLOGY, AND LOGISTICS  
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on the Use of Exit Criteria for Major Defense Systems  
(Report No. D-2001-032)

We are providing this report for review and comment. The Under Secretary of Defense for Acquisition, Technology, and Logistics, did not respond to the draft report; however, we considered comments received from the Deputy for Systems Acquisition, U.S. Army Tank-automotive and Armaments Command, and the Commander, Space and Naval Warfare Systems Command, when preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. We request that the Under Secretary of Defense for Acquisition, Technology, and Logistics respond to Recommendations A.1. and B. by February 12, 2001.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. John E. Meling at (703) 604-9091 (DSN 664-9091) (jmeling@dodig.osd.mil) or Mr. Douglas P. Neville at (703) 604-9076 (DSN 664-9076) (dpneville@dodig.osd.mil). See Appendix E for the report distribution. Audit team members are listed inside the back cover.

*David K. Steensma*

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Deputy Assistant Inspector General  
for Auditing

## Office of the Inspector General, DoD

**Report No. D-2001-032**

(Project No. D2000AE-0084)

(Formerly Project No. OAE-0121)

**January 10, 2001**

### Use of Exit Criteria for Major Defense Systems

#### Executive Summary

**Introduction.** Milestone decision authorities use exit criteria to establish goals for major Defense programs during an acquisition phase. Exit criteria are program-specific accomplishments that program managers must satisfactorily demonstrate before a program can progress further in the current acquisition phase or transition to the next acquisition phase. By satisfying the exit criteria, the program manager demonstrates to the milestone decision authority that a program is on schedule to achieving its final program goals. To perform the audit, we selected nine major Defense programs for review that the program offices estimated to total \$78 billion in development and procurement costs. The milestone decision authority for three of the major Defense acquisition programs included in our sample was the Under Secretary of Defense for Acquisition, Technology, and Logistics, while the milestone decision authorities for the remaining six programs (three Army, one Navy, and two Air Force) were the Component Acquisition Executives or their designees.

**Objectives.** The audit objective was to evaluate milestone decision authorities' use of exit criteria to track program progress in important technical, schedule, and management risk areas. Specifically, we determined whether milestone decision authorities use exit criteria to track acquisition program progress in meeting program goals and to aid in deciding whether programs should continue within an acquisition phase or progress to the next acquisition phase. In addition, we evaluated the management control program as it relates to the audit objective.

**Results.** Our review of the nine major Defense programs (three Army, three Navy, and three Air Force) showed that improvements were needed in the establishment of exit criteria at milestone decision points and in reporting the status toward attaining exit criteria requirements to milestone decision authorities.

- For seven of the nine programs reviewed, milestone decision authorities did not ensure that program managers proposed program-specific exit criteria for use at the future milestone decision point(s). As a result, the milestone decision authorities were limited in their ability to use exit criteria as a management tool to determine whether programs under their review and oversight should progress within an acquisition phase or continue into the next acquisition phase at milestone decision points (finding A).

- Program managers for three of the five major Defense acquisition programs reviewed did not report their status toward attaining exit criteria requirements in the quarterly Defense Acquisition Executive Summary. As a result, milestone decision authorities and Office of the Secretary of Defense action officers did not have information, through the Defense Acquisition Executive Summary, to use as a management tool for assessing each program's progress toward satisfying exit criteria requirements and for providing direction, when needed, between milestone decision points (finding B).

Recommendations in this report, if implemented, will ensure that exit criteria are established, that the status of approved exit criteria is routinely reported in the Defense Acquisition Executive Summary, and will correct the material management control weaknesses identified in Appendix A.

**Summary of Recommendations.** We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics:

- Enforce the requirement that program managers propose and milestone decision authorities establish program-specific exit criteria for exiting acquisition decision points for major Defense acquisition programs;
- Establish exit criteria for exiting the engineering and manufacturing development phases for the Multifunctional Information Distribution System-Low Volume Terminal and the VIRGINIA class submarine programs; and
- Revise mandatory instructions for the Consolidated Acquisition Reporting System to require program managers to report on the status toward satisfying exit criteria requirements in the Defense Acquisition Executive Summary.

We also recommend that the Deputy for Systems Acquisition, U.S. Army Tank-automotive and Armaments Command, establish exit criteria for the Wide Area Munition.

**Management Comments.** We provided a draft of this report on October 11, 2000. We did not receive comments from the Under Secretary of Defense for Acquisition, Technology, and Logistics. We received comments from the Deputy for Systems Acquisition, U.S. Army Tank-automotive and Armaments Command, who agreed with our recommendation applicable to the Wide Area Munition, and the Commander, Space and Naval Warfare Systems Command, who did not concur with the finding applicable to the Multifunctional Information Distribution System-Low Volume Terminal but agreed to implement the related recommendation. A discussion of the management comments is in the Findings section of the report, and the complete text is in the Management Comments section.

**Audit Response.** The Army and the Navy comments were responsive and additional comments are not required. Because the Under Secretary of Defense for Acquisition, Technology, and Logistics, did not respond to the draft report, we request that he provide comments on this final report by February 12, 2001.

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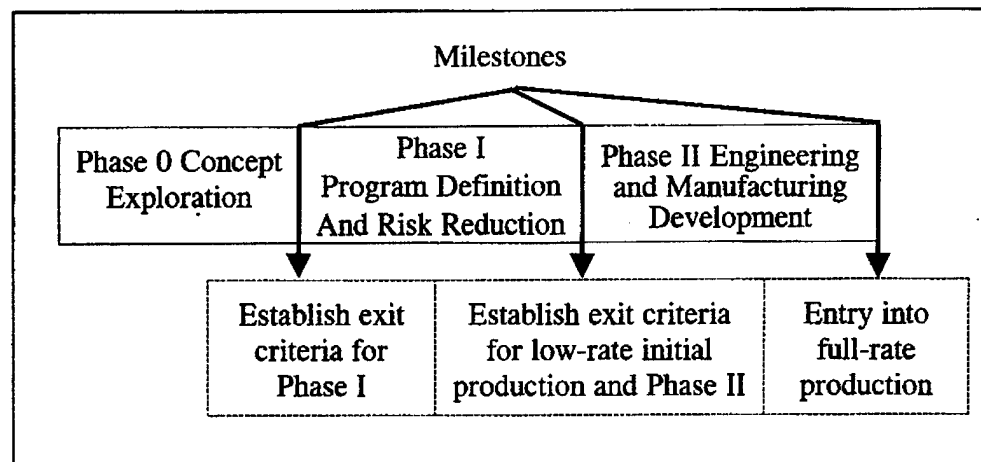
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## Background

This report discusses the extent that milestone decision authorities used exit criteria as a management tool for determining program manager's progress in achieving final program goals. DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs," May 11, 1999, require milestone decision authorities to use exit criteria as one of the tools available for use in deciding whether an acquisition program should progress within an acquisition phase or continue to the next phase at milestone decision points. At milestone decision points, program managers are to propose the exit criteria for the next phase of the program, and milestone decision authorities are to review, revise as needed, and document the approved exit criteria in their acquisition decision memorandums. As a set of internally developed benchmarks, the exit criteria proposed by program managers represent the issues and factors that will indicate that the program is satisfactorily progressing toward final program goals. The exit criteria are not to repeat the minimum required accomplishments for each acquisition phase contained in the approved program baseline and DoD Regulation 5000.2-R.

DoD Regulation 5000.2-R identifies the milestone decision points and the timing of exit criteria approval as follows:



In developing exit criteria, program managers are to identify criteria that will demonstrate to the milestone decision authority that the program is satisfactorily progressing toward achieving final program goals. Objective exit criteria, which lead to satisfying final program goals, can serve as an invaluable tool to the milestone decision authorities for measuring interim as well as long-term program progress. Conversely, exit criteria that duplicate existing requirements contribute little to the milestone decision authorities' ability to decide whether an acquisition program should progress within an acquisition phase or continue to the next phase at milestone decision points.

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For management purposes, DoD Regulation 5000.2-R requires program managers for major Defense acquisition programs to report the status toward satisfying exit criteria requirements in the quarterly Defense Acquisition Executive Summary (DAES). This reporting requirement enables milestone decision authorities to quickly react to potential problem areas between milestone decision points. Appendix B provides definitions of technical terms used in the report.

**Public Law.** DoD Regulation 5000.2-R links the requirement for exit criteria to section 2220, title 10, United States Code (10 U.S.C. 2220), "Performance Based Management: Acquisition Programs." In addition, 10 U.S.C. 2220 requires that the Secretary of Defense define cost, performance, and schedule goals for major Defense acquisition programs for each phase of the acquisition process.

**Programs Selected for Audit.** To perform the audit, we selected the following nine major Defense programs for review that the program offices estimated to total \$78 billion in development and procurement costs:

- the Army's Wide Area Munition, All Source Analysis System, and Multiple Launch Rocket System Upgrade<sup>1</sup>,
- the Navy's Multifunctional Information Distribution System-Low Volume Terminal (MIDS-LVT)<sup>1</sup>, Extended Range Guided Munition, and VIRGINIA Class Submarine<sup>1</sup>; and
- the Air Force's Wind Corrected Munition Dispenser, National Airspace System<sup>1</sup>, and Advanced Extremely High Frequency Program<sup>1</sup>.

The Under Secretary of Defense for Acquisition, Technology, and Logistics was the milestone decision authority for three of the five major Defense acquisition programs selected for our review. The authority for making milestone decisions for the remaining two major Defense acquisition programs were the Component Acquisition Executives or their designees. For the other four programs (two Army, one Navy, and one Air Force), the milestone decision authority was the Component Acquisition Executive or their designee. Appendix C provides program information on the nine programs reviewed.

## Objectives

The audit objective was to evaluate milestone decision authorities' use of exit criteria to track program progress in important technical, schedule, and management risk areas. Specifically, we determined whether milestone decision authorities were using appropriate exit criteria to track acquisition program

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<sup>1</sup> Major Defense acquisition program.



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progress in meeting program goals and to aid in deciding whether programs should progress within an acquisition phase or continue to the next acquisition phase. In addition, we evaluated the management control program as it relates to our audit objective. Appendix A discusses the scope and methodology as well as the management control program.

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## A. Establishing Program-Specific Exit Criteria

For seven of the nine programs reviewed, milestone decision authorities did not ensure that the program managers proposed program-specific exit criteria for use at future milestone decision point(s). This condition occurred because:

- the milestone decision authorities for four programs did not enforce the requirement that program managers propose exit criteria for use at future milestone decision point(s), and
- program managers for seven of the nine programs proposed one or more exit criteria that repeated the minimum requirements for acquisition milestone phases contained in the approved program baseline and DoD Regulation 5000.2-R.

As a result, the milestone decision authorities were limited in their ability to use exit criteria as a management tool to determine whether programs under their review and oversight should progress within an acquisition phase or continue into the next acquisition phase at milestone decision points.

### Exit Criteria Policy

**Defense Policy.** The requirement for establishing exit criteria as a management tool for use in the acquisition process was initially included in the February 23, 1991, version of DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures." The Instruction required that the milestone decision authority, at milestone decision points, establish program-specific results, or exit criteria, for the next phase(s) of the acquisition process for Defense acquisition programs. The Instruction defined exit criteria as critical results that must be attained during the next acquisition phase, and stated that failure to meet the exit criteria would halt the progress of a system towards the next milestone decision point. Furthermore, the Instruction required that exit criteria be program-specific accomplishments that did not repeat the minimum required accomplishments for each acquisition phase contained in the Instruction and in the acquisition program baseline.

The Under Secretary of Defense for Acquisition and Technology,<sup>2</sup> incorporated the exit criteria requirements of DoD Instruction 5000.2 in DoD Regulation 5000.2-R, March 15, 1996. For major Defense acquisition programs, the Regulation requires that the milestone decision authority establish exit criteria for the program definition and risk reduction phase (phase I) and the engineering and manufacturing development phase (phase II) of the acquisition process.

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<sup>2</sup> Renamed the Under Secretary of Defense for Acquisition, Technology, and Logistics in October 1999.

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The Regulation requires that the milestone decision authority document the exit criteria in the acquisition decision memorandum before the program enters each acquisition phase. Change 4 to DoD Regulation 5000.2-R, May 11, 1999, added the requirement that the milestone decision authority establish exit criteria for the low-rate initial production decision at the engineering and manufacturing development decision point. In addition, the Regulation states that the requirements in the Regulation are to serve as a model for managing other than major Defense acquisition programs.

**Military Departments' Policy.** The Military Departments extended the requirement for using exit criteria as defined in DoD Regulation 5000.2-R to all acquisition programs in:

- Army Regulation 70-1, "Research, Development, and Acquisition; Army Acquisition Policy," January 15, 1998;
- Secretary of the Navy Instruction 5000.2B, "Implementation of Mandatory Procedures for Major and Non-Major Defense Acquisition Programs and Major and Non-Major Information Technology Acquisition Programs," December 6, 1996; and
- Air Force Policy Directive 63-1, "Acquisition System," August 31, 1993.

## **Establishing Exit Criteria on the Nine Programs Reviewed**

All acquisition programs do not pass through each milestone decision point where DoD Regulation 5000.2-R requires the milestone decision authority to establish exit criteria. Some programs, such as the Army's All Source Analysis System and Multiple Launch Rocket System Upgrade and the Navy's Extended Range Guided Munition and MIDS-LVT, combined the program definition and risk reduction phase with the engineering and manufacturing development phase. For those programs, separate exit criteria were not necessary for the program definition and risk reduction phase. Similarly, the Army's All Source Analysis System and the Air Force's Advanced Extremely High Frequency Program did not include a low-rate initial production decision in their acquisition strategies. Consequently, exit criteria for low-rate initial production did not apply to those programs.

Accordingly, for the nine programs reviewed, we identified 23 decision points for which milestone decision authorities needed to establish exit criteria. Four of the decision points covered the Wide Area Munition product improvement programs. Although the milestone decision authority established exit criteria for the product improvement programs, he did not define whether the exit criteria were for the low-rate initial production decision or for exiting the engineering and manufacturing development phase of the acquisition process. In addition, as shown in the following table, the milestone decision authorities did not establish exit criteria for 4 of the 23 decision points.

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The Regulation requires that the milestone decision authority document the exit criteria in the acquisition decision memorandum before the program enters each acquisition phase. Change 4 to DoD Regulation 5000.2-R, May 11, 1999, added the requirement that the milestone decision authority establish exit criteria for the low-rate initial production decision at the engineering and manufacturing development decision point. In addition, the Regulation states that the requirements in the Regulation are to serve as a model for managing other than major Defense acquisition programs.

**Military Departments' Policy.** The Military Departments extended the requirement for using exit criteria as defined in DoD Regulation 5000.2-R to all acquisition programs in:

- Army Regulation 70-1, "Research, Development, and Acquisition; Army Acquisition Policy," January 15, 1998;
- Secretary of the Navy Instruction 5000.2B, "Implementation of Mandatory Procedures for Major and Non-Major Defense Acquisition Programs and Major and Non-Major Information Technology Acquisition Programs," December 6, 1996; and
- Air Force Policy Directive 63-1, "Acquisition System," August 31, 1993.

## **Establishing Exit Criteria on the Nine Programs Reviewed**

All acquisition programs do not pass through each milestone decision point where DoD Regulation 5000.2-R requires the milestone decision authority to establish exit criteria. Some programs, such as the Army's All Source Analysis System and Multiple Launch Rocket System Upgrade and the Navy's Extended Range Guided Munition and MIDS-LVT, combined the program definition and risk reduction phase with the engineering and manufacturing development phase. For those programs, separate exit criteria were not necessary for the program definition and risk reduction phase. Similarly, the Army's All Source Analysis System and the Air Force's Advanced Extremely High Frequency Program did not include a low-rate initial production decision in their acquisition strategies. Consequently, exit criteria for low-rate initial production did not apply to those programs.

Accordingly, for the nine programs reviewed, we identified 23 decision points for which milestone decision authorities needed to establish exit criteria. Four of the decision points covered the Wide Area Munition product improvement programs. Although the milestone decision authority established exit criteria for the product improvement programs, he did not define whether the exit criteria were for the low-rate initial production decision or for exiting the engineering and manufacturing development phase of the acquisition process. In addition, as shown in the following table, the milestone decision authorities did not establish exit criteria for 4 of the 23 decision points.

### Availability of Exit Criteria for Future Program Reviews

<u>Program</u>	<u>Program Definition and Risk Reduction Phase</u>	<u>Low-Rate Initial Production Decision</u>	<u>Engineering and Manufacturing Development Phase</u>
<b>Army</b>			
All Source Analysis System			X
Multiple Launch Rocket System			
-Guided Rocket		X	X
-Launcher			X
Wide Area Munition			
-Basic		X	Not Established
-Product Improvement-1		Undeterminable	Undeterminable
-Product Improvement-2		Undeterminable	Undeterminable
<b>Navy</b>			
Extended Range Guided Munition		X	X
MIDS-LVT		X	Not Established
VIRGINIA Class Submarine	X	X	Not Established
<b>Air Force</b>			
Advanced Extremely High Frequency Program	X		
National Airspace Program	X	Not Established	X
Wind Corrected Munition Dispenser		X	X

X- The milestone decision authority establish exit criteria

Undeterminable- Exit criteria not designated for a specific decision point.

Not Establish- Milestone decision authority did not establish exit criteria for this decision point.

## Need for Exit Criteria

Milestone decision authorities for four of the nine programs reviewed did not require program managers to propose exit criteria for use at all applicable milestone decision points. This condition occurred because the milestone decision authorities for the four programs (Wide Area Munition, MIDS-LVT, VIRGINIA class submarine and the National Airspace Program) did not enforce

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the requirement that program managers propose exit criteria for use at future milestone decision points. In the following paragraphs, we discuss the three programs that require exit criteria for upcoming decisions.

**Wide Area Munition.** The Wide Area Munition consists of a basic program and two product improvement programs. For the basic program, the Program Executive Officer for Armored Systems Modernization<sup>3</sup> established exit criteria for low-rate initial production, but not for the engineering and manufacturing development phase. The milestone decision authority established the low-rate initial production exit criteria for the basic program at the same time that he made the low-rate initial production decision on June 18, 1996. However, the milestone decision authority did not require the program manager to propose exit criteria for the engineering and manufacturing development phase. When asked why not, the project officer stated that the exit criteria established for this decision were applicable for the low-rate initial production decision and the engineering and manufacturing development phase. However, the project officer was not able to provide documentation to support that assertion. For the two product improvements, the milestone decision authority did not identify whether the exit criteria established at the engineering and manufacturing development decision points were applicable to the low-rate initial production decision or for the engineering and manufacturing development phase of the acquisition process.

More recently, the Wide Area Munition program office informed us that it is restructuring the program. The restructured program will be called the Advanced Hornet and will have modified exit criteria. The user is in the process of revising the operational requirements document for the restructured program.

**MIDS-LVT.** For the MIDS-LVT program, the Under Secretary of Defense for Acquisition, Technology, and Logistics approved entry into the engineering and manufacturing development phase of the acquisition process on December 17, 1993. However, he did not approve the exit criteria that the program manager proposed for exiting that phase. Instead, he shifted the focus of the program and instructed the program manager to submit updated exit criteria. In response, the program manager proposed updated criteria for the engineering and manufacturing development phase on October 5, 1994. On review of the proposed criteria, the milestone decision authority established the criteria for the low-rate initial production decision, but not the exit criteria for the engineering and manufacturing development phase. The program manager believed that the milestone decision authority would establish those exit criteria at the program review for the low-rate initial production decision in May 2000. However, the milestone decision authority did not require the program manager to propose exit criteria for the engineering and manufacturing development phase at the program review held on May 11, 2000.

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<sup>3</sup> On June 23, 1997, the milestone decision authority was delegated to the Deputy for Systems Acquisition, U.S. Army Tank-automotive and Armaments Command.

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**VIRGINIA Class Submarine.** For the VIRGINIA class submarine, the Under Secretary of Defense for Acquisition, Technology, and Logistics approved entry into the engineering and manufacturing development phase of the acquisition process on June 30, 1995. At that time, the milestone decision authority established exit criteria for the low-rate initial production decision. However, the milestone decision authority did not require the program manager to propose exit criteria for the engineering and manufacturing development phase. When asked, the program manager stated that he did not believe that he could develop meaningful exit criteria for a decision that was 12 years in the future. He further stated that the program office planned to propose exit criteria for engineering and manufacturing development in FY 2002, as part of the overarching integrated product team review.

**Requirement for Exit Criteria.** Milestone decision authorities should have required the program managers to propose different and more rigorous criteria for exiting the engineering and manufacturing development phase for the three acquisition programs. As required by DoD Regulation 5000.2-R, program managers must demonstrate more rigorous cost, schedule, and performance criteria between the low-rate initial production decision and the full-rate production milestone decision points. For example, the Regulation requires the program manager to demonstrate, through testing, that the system is potentially operationally effective and suitable before the low-rate initial production decision. Before the full-rate production decision, the Regulation requires the program manager to demonstrate that the system is operationally effective and suitable. Consequently, without criteria, the milestone decision authority and the program manager do not have the benefit of a focused approach that exit criteria bring to the decision-making process.

## **Establishing Program-Specific Requirements for Exit Criteria**

DoD Regulation 5000.2-R indicates that exit criteria should be a level of demonstrated performance (for example, a level of engine thrust), the accomplishment of a process at a certain level of efficiency (for example, manufacturing yield) or a successful accomplishment of an event (for example, first flight) that shows that the program is progressing satisfactorily toward program goals. These are examples of program-specific exit criteria. With the exception of the Advanced Extremely High Frequency Program and the Multiple Launch Rocket System, program managers for the nine programs reviewed proposed one or more exit criteria that were not program specific as required by the Regulation, and instead repeated the minimum required program accomplishments contained in the approved program baseline or DoD Regulation 5000.2-R. Appendix D lists the exit criteria established for the nine programs reviewed and identifies the exit criteria that were not program specific.

The following paragraphs discuss examples of program-specific exit criteria and nonprogram-specific exit criteria that program managers proposed and milestone decision authorities approved.

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**Program-Specific Exit Criteria.** Program managers did propose exit criteria that were program specific. For example, exit criteria established for the Wind Corrected Munition Dispenser included a requirement that the program manager demonstrate dispenser operation in medium-to-high altitudes before the program could enter low-rate initial production. Similarly, exit criteria for the VIRGINIA class submarine included a requirement that the program manager provide an estimate of the submarine's inboard electronics configuration before the program definition and risk reduction phase could be exited. On the Extended Range Guided Munition program, exit criteria required that the program manager demonstrate a successful target engagement of an extended range guided munition that was land-based and gun-fired before the milestone decision authority granted approval to enter low-rate initial production. Satisfaction of these program-specific exit criteria will demonstrate to the milestone decision authorities whether the programs are progressing satisfactorily toward program goals.

**Exit Criteria That are Not Program Specific.** One or more exit criteria for seven of the nine programs reviewed were not program specific. On the Wide Area Munition program, for example, exit criteria required the program manager to demonstrate the achievement of performance requirements specified in the required operational capability document. Similarly, on the Wind Corrected Munition Dispenser program, exit criteria required the program manager to submit documentation to support the decision to exit the engineering and manufacturing development phase. Such nonspecific exit criteria do not provide milestone decision authorities with additional information to make programmatic decisions.

**Examples Identified in Earlier Audit Reports.** In 1996, 1997, and 2000, we reported on other acquisition programs that did not use established exit criteria for making milestone decisions. In Inspector General, DoD, Report No. 97-018, "The Patriot Advanced Capabilities-3 Program," November 6, 1996, we reported that the exit criteria for full-rate production did not require that missile reliability, a critical performance parameter, be stabilized before production. The Office of the Secretary of Defense (OSD) revised the exit criteria to include achievement of proper missile reliability before entering full-rate production. In Inspector General, DoD, Report No. 97-199, "The Minuteman III Guidance Replacement Program," July 29, 1997, we reported that the exit criteria established for the low-rate initial production were too general in nature. On March 6, 1997, the Program Executive Office for Space Programs approved revised exit criteria, which listed more specific accomplishments as prerequisites before the program manager could award the low-rate initial production contract. There was no indication that the OSD took measures to ensure that other programs did not have the same deficiency.

## **Effective Use of Exit Criteria**

Milestone decision authorities for the Wind Corrected Munition Dispenser, the National Airspace System, and the Multiple Launch Rocket System Upgrade used the established exit criteria as an integral part in managing their programs.



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**Wind Corrected Munition Dispenser.** As evidenced in the acquisition decision memorandum, the Principal Deputy Assistant Secretary of the Air Force for Acquisition and Management used the exit criteria as an integral part of the decision-making process. In the August 3, 1998, memorandum, the milestone decision authority identified the established low-rate initial production exit criteria and explained how the program manager had demonstrated achievement of the exit criteria. Clearly, this milestone decision authority used the exit criteria as a management tool in the decision-making process.

**National Airspace System.** For the National Airspace System program, the Principal Deputy Assistant Secretary of the Air Force for Acquisition and Management requested and received documentation from the program manager that demonstrated that exit criteria established for the program definition and risk reduction and engineering and manufacturing development phases were met.

**Multiple Launch Rocket System Upgrade.** An integrated product team, representing the Army Program Executive Officer for Tactical Missiles, used the exit criteria for monitoring the program manager's progress in satisfying requirements for entry into low-rate initial production. This review occurred 1 year before the low-rate initial production decision point. As a result of the review, the program manager was able to provide the integrated product team with additional information demonstrating the satisfaction of the exit criteria before the low-rate initial production decision point.

## **Summary**

Milestone decision authorities were not enforcing the requirement that program managers propose program-specific exit criteria for use as a management tool in reviewing and overseeing acquisition programs. In the absence of program-specific exit criteria for major acquisition decision points, milestone decision authorities were limited in their ability to use exit criteria as a management tool to determine whether programs under their review and oversight should progress within an acquisition process or continue into the next acquisition phase at milestone decision points.

## **Management Comments on the Finding and Audit Response**

**Management Comments on the MIDS-LVT Exit Criteria.** The Commander, Space and Naval Warfare Systems Command, nonconcurred with the finding assertion for the MIDS-LVT program that four of the exit criteria established for entering the low-rate initial production phase of the acquisition process were not program specific. He stated that the four exit criteria (closing out all critical design review issues, completing qualification testing, conducting the production readiness review, and conducting a physical configuration audit) were program specific and provided the milestone decision authority with information to make the appropriate programmatic decision. The complete text is in the Management Comments section of this report.

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**Audit Response.** We agree that the four exit criteria in question will provide the milestone decision authority with information to make the appropriate programmatic decision. As stated in the finding, DoD Regulation 5000.2 requires that the exit criteria be program specific and not repeat the minimum required accomplishments contained in the approved program baseline or DoD Regulation 5000.2. As a result of the comments received, we reviewed our assessment and determined that DoD Regulation 5000.2-R does not require a production readiness review; therefore, we adjusted Appendix D accordingly. However, the remaining three exit criteria in question were not program specific because they repeated required accomplishments contained in DoD Regulation 5000.2.

## **Recommendations, Management Comments, and Audit Response**

**A.1. We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics:**

a. Enforce the requirement that program managers propose and milestone decision authorities establish program-specific criteria for exiting acquisition decision points for major Defense acquisition programs;

b. Establish exit criteria for exiting the engineering and manufacturing development phases for the Multifunctional Information Distribution System-Low Volume Terminal and the VIRGINIA class submarine programs.

**Management Comments.** The Under Secretary of Defense for Acquisition, Technology, and Logistics did not comment on the recommendation. We request that he provide comments in response to the final report.

Although not required to comment, the Commander, Space and Naval Warfare Systems Command, stated that exit criteria for the MIDS-LVT full-rate production decision were being developed and would be submitted to the milestone decision authority for approval.

**A.2. We recommend that the Deputy for Systems Acquisition, U.S. Army Tank-automotive and Armaments Command, establish exit criteria for the low-rate initial production decision and the engineering and manufacturing development phase for the product improvement programs-1 and -2 of the Wide Area Munition.**

**Management Comments.** The Deputy for Systems Acquisition, U.S. Army Tank-automotive and Armaments Command, concurred and estimated that revision of the exit criteria will be completed by January 19, 2001.

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## **B. Exit Criteria Status Reporting**

Program managers for three of the five major Defense acquisition programs reviewed did not report their status toward attaining exit criteria requirements in the quarterly Defense Acquisition Executive Summary. Program managers did not report exit criteria status because two program managers did not understand the exit criteria reporting requirements established in DoD Regulation 5000.2-R, and one program manager did not have exit criteria established to report against. Moreover, the Defense Acquisition Executive did not have procedures in place to enforce the reporting requirement. As a result, milestone decision authorities and OSD action officers did not have information to use as a management tool for assessing each program's progress toward satisfying exit criteria requirements and for providing direction, when needed, between milestone decision points.

### **Exit Criteria Status Reporting Policy**

DoD Regulation 5000.2-R requires program managers for major Defense acquisition programs to report the status toward attaining exit criteria requirements in the quarterly Defense Acquisition Executive Summary (DAES). Program managers are to prepare the quarterly DAES using the Consolidated Acquisition Reporting System (CARS). The CARS is a personal-computer-based, entry and reporting software package that maintains and reports information on major Defense acquisition programs. The CARS has mandatory instructions on how to prepare and review the quarterly DAES and defines where in the DAES the program manager must report the program's status toward achieving exit criteria requirements.

### **Reporting Program Status**

Program managers for three of the five major Defense acquisition programs reviewed did not report their status toward achieving exit criteria requirements in the quarterly DAES. Program managers for the Advanced Extremely High Frequency Program and the Multiple Launch Rocket System did not understand the exit criteria reporting requirements in DoD Regulation 5000.2-R and the program manager for the VIRGINIA class submarine did not have exit criteria established to report against. This occurred because the Defense Acquisition Executive did not have procedures in place through the mandatory CARS instructions to enforce the reporting requirement. Although the CARS instructions defines the process that OSD action officers use to assess and review the DAES submission, it does not assign the OSD action officers with responsibility for ensuring that program managers include exit criteria status information in the DAES. Program managers, when asked, gave different reasons for not reporting exit criteria status information in the DAES.

**Advanced Extremely High Frequency Program.** The program manager for the Advanced Extremely High Frequency Program stated that she was not aware

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of the requirement to report on the status toward achieving exit criteria requirements in the DAES. Moreover, the program manager stated that OSD action officers did not note the omission during their review of the quarterly DAES submission. As a result of our review, the program manager began reporting on the status toward achieving exit criteria requirements in the June 2000 DAES. Current information concerning the ability of a program manager to achieve established exit criteria is essential in that it provides the milestone decision authority with the opportunity to intercede if progress is not deemed satisfactory.

**Multiple Launch Rocket System Upgrade.** The program manager stated that he reported on the status toward achieving the program's exit criteria in the DAES on an exception basis. Specifically, the program manager explained that his DAES submissions on exit criteria status were omitted unless he was experiencing problems in achieving exit criteria requirements. He also indicated that OSD action officers had not brought the exit criteria reporting omission to his attention for corrective action.

**VIRGINIA Class Submarine.** The program manager for the VIRGINIA class submarine also did not report on the status toward attaining the program's exit criteria in the DAES because he did not propose, and the milestone decision authority did not establish, exit criteria for the engineering and manufacturing development phase of the acquisition process.

**Condition Previously Reported.** In Inspector General, DoD, Report No. 99-075, "Acquisition of the SH-60R Light Airborne Multipurpose System Mark III Block II Upgrade," February 2, 1999, we also reported that OSD action officers did not question the absence of exit criteria status information in the DAES. Based on the report, the program manager agreed to begin reporting on the program's exit criteria status in the DAES. There was no indication that the OSD took any measures to ensure that other programs did not have the same deficiency.

## **CARS Procedures**

The CARS instruction identified nine indicator categories for OSD action officers' examination. However, the nine indicators did not include a requirement for OSD action officers to review exit criteria reporting information. An OSD action officer confirmed that their primary review focus was on the nine indicator categories. Without this focus in the CARS instruction, OSD action officers were not verifying whether program managers were reporting on their exit criteria status as required. To remedy this condition, the CARS instruction could be revised to include exit criteria requirements as an indicator category for OSD action officer examination or to insert CARS validation checks on DAES submissions for the program managers to include exit criteria status information in the DAES.

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## **Summary**

One of the primary purposes of establishing and monitoring exit criteria is to provide milestone decision authorities with information for assessing a program's progress toward satisfying final program goals; a periodic status reporting mechanism is essential. Without such a reporting mechanism, milestone decision authorities and OSD action officers did not have information to use as a management tool for assessing each program's progress toward satisfying exit criteria requirements and for providing direction, when needed, between milestone decision points.

## **Recommendation and Management Comments**

**B.** We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics revise the Consolidated Acquisition Reporting System instructions to include a requirement to use exit criteria as an indicator category for Office of the Secretary of Defense action officer examination or to insert a Consolidated Acquisition Reporting System validation check on Defense Acquisition Executive Summary submissions for program managers to include exit criteria status information in the Defense Acquisition Executive Summary.

**Management Comments.** The Under Secretary of Defense for Acquisition, Technology, and Logistics did not comment on the recommendation. We request that he provide comments in response to the final report.

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## Appendix A. Audit Process

### Scope

We conducted this audit from January through September 2000, and reviewed documentation dated from November 1986 through August 2000. We performed the audit using requirements pertaining to exit criteria in DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs," Change 4, May 11, 1999.

In accomplishing the objective, we selected nine major Defense programs to review: three each from the Army, Navy and Air Force. We subjectively selected the programs to provide a variety of weapon types and a cross-section of DoD acquisition organizations, while considering the amount of prior audit coverage. We did not include Major Automated Information Systems in our review because exit criteria for those programs will be covered in separate upcoming audits. The nine major Defense programs selected were:

- the Army's Wide Area Munition, All Source Analysis System, and Multiple Launch Rocket System Upgrade;
- the Navy's MIDS-LVT, Extended Range Guided Munition, and VIRGINIA Class Submarine; and
- the Air Force's Wind Corrected Munition Dispenser, National Airspace System, and Advanced Extremely High Frequency Program.

**DoD-Wide Corporate Level Government Performance and Results Act Goals.** In response to the Government Performance and Results Act, the Secretary of Defense annually establishes DoD-wide corporate level goals, subordinate performance goals, and performance measures. This report pertains to achievement of the following corporate level goal and subordinate performance goal.

- **FY 2001 DoD Corporate Level Goal 2:** Prepare now for an uncertain future by pursuing a focused modernization effort that maintains U.S. qualitative superiority in key warfighting capabilities. Transform the force by exploiting the Revolution in Military Affairs, and reengineer the Department to achieve a 21st century infrastructure. (01-DoD-2)
- **FY 2001 Subordinate Performance Goal 2.4:** Meet combat forces' needs smarter and faster, with products and services that work better and cost less, by improving the efficiency of DoD's acquisition processes. (01-DoD-2.4)

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**General Accounting Office High-Risk Area.** The General Accounting Office has identified several high-risk areas in the DoD. This report provides coverage of the Defense Weapons Systems Acquisition high-risk area.

## **Methodology**

We conducted this program audit in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and included such tests of management controls as we deemed necessary. We did not use computer-processed data to perform this audit.

To accomplish the audit objective, we took the following steps:

- determined whether exit criteria were in place for milestone decision points and other programmatic events, such as low-rate initial production decisions;
- determined whether the program managers periodically reported the status on attaining the exit criteria requirements to milestone decision authorities for their review and use; and
- determined whether the milestone decision authorities were using the exit criteria as a program management tool.

**Contacts During the Audit.** We visited or contacted individuals and organizations within the DoD. Further details are available upon request.

## **Management Control Program Review**

DoD Directive 5010.38, "Management Control (MC) Program," August 26, 1996, and DoD Instruction 5010.40, "Management Control (MC) Program Procedures," August 28, 1996, require DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

**Scope of the Review of the Management Control Program.** In accordance with DoD Directive 5000.1, "Defense Acquisition," March 15, 1996, and DoD Regulation 5000.2-R, acquisition managers are to use program cost, schedule, and performance parameters as control objectives to implement the requirements of DoD Directive 5010.38. Accordingly, we limited our review to management controls directly related to the use of exit criteria for major defense systems.

**Adequacy of Management Controls.** We identified a material management control weakness as defined by DoD Instruction 5010.40, "Management Control (MC) Program Procedures," August 28, 1996. Management controls were not adequate for ensuring that program managers for major Defense acquisition

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program established exit criteria and reported the status of achieving approved exit criteria requirements in the quarterly Defense Acquisition Executive Summary. Recommendations A.1. and B., if implemented, will ensure that exit criteria are established and that the status of approved exit criteria is routinely reported in the Defense Acquisition Executive Summary.

**Adequacy of Management's Self-Evaluation.** The Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics did not perform a self-evaluation to identify material management control weaknesses.

## **Prior Coverage**

During the last 5 years, the Inspector General, DoD, issued four reports that addressed exit criteria.

Inspector General, DoD, Report No. D-2000-187, "The Low-Rate Initial Production Decision for the Joint Biological Point Detection System," September 11, 2000

Inspector General, DoD, Report No. 99-075, "Acquisition of the SH-60R Light Airborne Multipurpose System Mark III Block II Upgrade," February 2, 1999

Inspector General, DoD, Report No. 97-199, "The Minuteman III Guidance Replacement Program," July 29, 1997

Inspector General, DoD, Report No. 97-018, "The Patriot Advanced Capabilities-3 Program," November 4, 1996



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## Appendix B. Terms and Definitions

**Acquisition Category.** An acquisition category is an attribute of an acquisition program that determines the program's level of review, decision authority, and procedures. The acquisition categories consist of I, major Defense acquisition programs; IA, major automated information systems; II, less than major systems; and III, all other acquisition programs. In addition, Acquisition Category I programs have two subcategories: Acquisition Category ID programs, where the milestone decision authority is the Under Secretary Defense for Acquisition, Technology, and Logistics, and Acquisition Category IC programs, where the milestone decision authority is the Component Acquisition Executive.

**Acquisition Phase.** An acquisition phase represents all the tasks and activities needed to bring a program to the next major milestone. Phases provide a logical means of progressively translating broadly stated mission needs into well-defined, system-specific requirements and, ultimately, into operationally effective, suitable, and survivable systems.

**Component Acquisition Executive.** A single official within a component who is responsible for all acquisition functions within that component.

**Defense Acquisition Executive Summary.** The DAES is the principal Defense Acquisition Executive reporting mechanism for tracking program status between program milestone events.

**Engineering and Manufacturing Development.** Engineering and manufacturing development is the third phase of the acquisition process where the program fully develops, engineers, designs, fabricates, tests, and evaluates the systems and the principal items necessary for its support.

**Exit Criteria.** Exit criteria are program-specific accomplishments that must be satisfactorily demonstrated before a program can progress further in the current acquisition phase or continue to the next acquisition phase.

**Low-Rate Initial Production.** Low-rate initial production is the production of a system in limited quantities to provide articles for additional operational test and evaluation, to establish an initial production base, and to permit an orderly increase in the production rate that will lead to full-rate production after successful completion of operational testing.

**Milestone.** A milestone is the point where the milestone decision authority decides whether to start or continue an acquisition program in the acquisition process.

**Milestone Decision Authority.** A milestone decision authority is the individual designated in accordance with criteria established by the Under Secretary of Defense for Acquisition, Technology, and Logistics to approve entry of an acquisition program into the next phase.

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## Appendix C. Information on Nine Programs Reviewed

**Advanced Extremely High Frequency Program.** The Advanced Extremely High Frequency Program is an Air Force Acquisition Category ID major Defense acquisition program. The Advanced Extremely High Frequency satellite system provides survivable, jam-resistant, worldwide, secure communications for the strategic and tactical warfighter. The program manager estimates a total acquisition cost of \$2.5 billion. The milestone decision authority for the program is the Under Secretary of Defense for Acquisition, Technology, and Logistics.

**All Source Analysis System.** The All Source Analysis System is an Army Acquisition Category II major system. It is a mobile, tactically deployable, computer-assisted intelligence and electronic warfare processing system. The system is employed during peacetime and wartime operational environments and is capable of continuous 24-hours-a-day, 7 days-a-week operation under tactical conditions. The program office estimates a total acquisition cost of \$1.2 billion. The milestone decision authority for the program is the Army Program Executive Officer for Command, Control, and Communication Systems.

**Extended Range Guided Munition.** The Extended Range Guided Munition is a Navy Acquisition Category II major system. The Extended Range Guided Munition projectile is rocket-assisted, with a range of 63 nautical miles. The Extended Range Guided Munition is designed to provide supporting fire for amphibious assaults, raids, demonstrations or withdrawals; to suppress or destroy hostile anti-ship weapons and air defense systems; and to delay and disrupt enemy movement and reinforcement of defending forces. The program office estimates a total acquisition cost of \$600 million. The milestone decision authority for the program is the Navy Program Executive Officer for Surface Strike.

**MIDS-LVT.** The MIDS-LVT is a Navy Acquisition Category ID major Defense acquisition program and is a joint, multi-service cooperation development program. It is a communications, navigation, and identification system intended to support key theater functions such as surveillance, identification, air control, weapons engagement coordination, and direction for all Services and allied forces. The MIDS-LVT will provide jamming-resistant, wide-area communications between the MIDS-LVT and the Joint Tactical Information Distribution System-equipped platforms. It is intended to improve joint interoperability, enhance battlefield situation awareness, ensure information superiority, and support precision engagement of threats for our forces. Under the direction of the Navy Program Executive Officer for Tactical Air Programs, the MIDS-LVT Program Office estimates a total program cost of \$1.2 billion in FY 1992 base dollars. The milestone decision authority for the program is the Under Secretary of Defense for Acquisition, Technology, and Logistics.

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**Multiple Launch Rocket System Upgrade.** The Multiple Launch Rocket System Upgrade program is an Army Acquisition Category IC major Defense acquisition program. It satisfies the need for a non-nuclear, all-weather, indirect, area fire weapon system to strike counterfire, air defense, armored formations, and other high-payoff targets at all depths of the tactical battlefield. The Multiple Launch Rocket System Upgrade consists of two components, the guided rocket and the multiple launch rocket system launcher. Primary missions of the Multiple Launch Rocket System Upgrade include suppression, neutralization, and destruction of threat fire support and forward area air defense targets. The Multiple Launch Rocket System Upgrade program office estimates a total program cost of \$4.9 billion. The milestone decision authority for the program is the Army Program Executive Officer for Tactical Missiles.

**National Airspace System.** The National Airspace System is an Air Force Acquisition Category IC major Defense acquisition program. It will modernize the DoD radar approach control facilities in parallel with the Federal Aviation Administration. The program provides systems and facilities that are compatible and interoperable with the Federal Aviation Administration modernization efforts, prevents DoD flight delays and cancellations, continues DoD access into special use airspace, provides transparent services to military and civil aircraft, replaces aging DoD air traffic control systems, and increases flight safety. The National Airspace System also includes the Military Airspace Management System that will schedule and manage special use airspace. The program office estimates a total program cost of \$1 billion. The milestone decision authority for the program is the Principal Deputy Assistant Secretary of the Air Force for Acquisition and Management.

**VIRGINIA Class Submarine.** The VIRGINIA Class Submarine is a Navy Acquisition Category ID major Defense acquisition program. The VIRGINIA Class submarine is designed to: replace the LOS ANGELES Class submarines; rapidly deploy to militarily important hostile ocean areas and deny their use to the enemy; clear the way for strikes by other friendly forces; and engage and destroy enemy submarines, surface forces and land targets, as well as provide full-dimensional protection for afloat forces. The VIRGINIA class submarine program office estimates a total program cost of \$65 billion. The milestone decision authority for the program is the Under Secretary of Defense for Acquisition, Technology, and Logistics.

**Wide Area Munition.** The Wide Area Munition is an Army Acquisition Category II major system. It is a smart, autonomous, top-attack anti-tank munition designed to defeat armored combat vehicles from a standoff distance. It uses acoustic and seismic sensors in its ground platform to detect, track, and classify potential targets, and then launch an infrared deterring submunition over the top of the selected target. Once the submunition detects the target, it fires an explosively formed penetrator to defeat the target. The Wide Area Munition program office estimates a total program cost of \$583 million. The milestone decision authority for the program is the Deputy for Systems Acquisition, U.S. Army Tank-automotive and Armaments Command.

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There are three distinct Wide Area Munition versions. The Wide Area Munition-basic, the Wide Area Munition product improvement program-1, and the Wide Area Munition product improvement program-2.

**Wide Area Munition-Basic.** The Wide Area Munition-basic is the Army's first generation of a smart autonomous, top attack munition. It includes seismic and acoustic sensors. It can be hand emplaced and either manually or remotely set.

**Wide Area Munition Product Improvement Program-1.** This version improves upon the Wide Area Munition-basic, increasing radio and two-way communication with improved range.

**Wide Area Munition Product Improvement Program-2.** This version further improves the weapon system with active and passive sublet sensors, a combined effects warhead, and ground data sharing.

**Wind Corrected Munitions Dispenser.** The Wind Corrected Munitions Dispenser is an Air Force Acquisition Category II major system. The Air Force initiated the program in response to operational limitations identified during Operation Desert Storm. Adverse weather, smoke, dust, and enemy defenses affected delivery of direct attack munitions. Cluster munition accuracy was significantly reduced when released at mid-to-high altitude. The Wind Corrected Munitions Dispenser consists of a smart guidance tail kit, which replaces the current tail section of the Combined Effects Munition, Gator, and Sensor Fused Weapon weapon systems. The Wind Corrected Munitions Dispenser program office estimates a total program cost of \$674 million. The milestone decision authority for the program is the Principal Deputy Assistant Secretary of the Air Force for Acquisition and Management.

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## Appendix D. Exit Criteria Established For Nine Programs Reviewed

Listed are the exit criteria that milestone decision authorities established in one or more acquisition decision memorandums for the nine programs reviewed. For the nine programs, we identify the exit criteria that the program manager was required to satisfy before exiting each applicable acquisition phase.

**Advanced Extremely High Frequency Program.** On May 4, 1999, the milestone decision authority established these exit criteria for exiting the program definition and risk reduction phase of the acquisition process:

- Provide an updated, quantitative risk assessment demonstrating program maturity.
- Successfully complete a system design review with the offeror demonstrating the potential to meet performance, schedule, and cost requirements.
- Conclude a successful engineering model process risk-reduction program.

**All Source Analysis System.** On July 28, 1993, the milestone decision authority established these exit criteria for exiting the engineering and manufacturing development phase:

- During an initial operational test, the program must demonstrate the capability to auto generate 12, and auto sanitize 2, message types.
- During an initial operational test, the program must demonstrate the ability to provide continuous intelligence support by resynchronizing databases 90 percent of the time after tactical displacement.
- The program must have three certifications:
  - Joint Interoperability\*
  - Automatic Digital Network Category III
  - Sensitive Compartmented Information
- During an initial operational test, the program must demonstrate that workstation, on-equipment diagnostic capabilities permit an operator to correctly fault detect and isolate replaceable units to a single line 90 percent of the time.

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\* Exit criteria are not program specific as stated in DoD Regulation 5000.2-R.

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**Extended Range Guided Munitions.** On August 5, 1996, the milestone decision authority established exit criteria for the low-rate initial production decision and exiting the engineering and manufacturing development phase of the program.

Low-rate initial production decision. A successful target engagement of a land-based, gun-fired, extended range guided munition, in an operational requirements document threshold-jamming environment.

Engineering and manufacturing development phase. The successful completion of operational evaluation and a recommendation for fleet introduction.\*

**Multifunctional Information Distribution System--Low Volume Terminal.** On October 5, 1994, the milestone decision authority established these exit criteria for the low-rate initial production decision:

- Close out all critical design review issues.\*
- Complete qualification testing.\*
- Update independent cost estimates.
- Revise the acquisition strategy report.
- Conduct the production readiness review.
- Verify the Multifunctional Information Distribution System terminal.
- Conduct a physical configuration audit.\*
- Demonstrate compatibility and interoperability with the Joint Tactical Information Distribution System class-2 terminals.
- Include an early operational assessment of platform interface and operator workload.

**Multiple Launch Rocket System Upgrade.** The Multiple Launch Rocket System Upgrade consists of two components, the guided rocket and the multiple launch rocket system launcher (launcher). On June 11, 1998, the milestone decision authority established exit criteria for the guided rocket low-rate initial production decision and the engineering and manufacturing development phase. On May 28, 1998, the milestone decision authority established exit criteria for the launcher engineering and manufacturing development phase.

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\* Exit criteria are not program specific as stated in DoD Regulation 5000.2-R.

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For the guided rocket low-rate initial production decision:

- Obtain type classification with a successful functional configuration audit.
- Obtain an 88.11 percent reliability rate.
- Complete a successful production readiness review.

For the guided rocket engineering and manufacturing development phase:

- The guided rocket must have a maximum range of 60 kilometers and a minimum range of 15 kilometers.
- The guided rocket must have an effectiveness rate of 30 percent expected fractional damage.
- Guided rocket reliability must be 86.7 percent.
- There must be a less than 1 percent hazardous dud rate.

For the launcher engineering and manufacturing development phase:

- To fire each type of the Multiple Launch Rocket System family of missiles that are in production.

**National Airspace System.** The milestone decision authority established exit criteria for exiting the program definition and risk reduction phase and the engineering and manufacturing development phase on November 5, 1992, and July 24, 1995, respectively.

For the program definition and risk reduction phase:

- Demonstrate repackaging the Federal Aviation Administration Common Console into the DoD configuration.
- Demonstrate Military Airspace Management System prototype.
- Sign executive interagency agreements for test, procurement, and support of Federal Aviation Administration Advanced Automation System.\*

For the engineering and manufacturing development phase:

- Award the nondevelopmental items contracts for the Voice Communications Switching System, Digital Airport Surveillance Radar, and Digital Advanced Automation System programs.
- Successfully complete the DoD National Airspace System Initial Operational Test and Evaluation.\*

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\* Exit criteria are not program specific as stated in DoD Regulation 5000.2-R.

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- Incorporate the Major Range and Test Facility Base and Maintenance Replacement Unit quantities into the National Airspace System, if quantities and funding are provided in time for the option exercise.

**VIRGINIA Class Submarine.** The milestone decision authority established exit criteria for exiting the program definition and risk reduction phase and the low-rate initial production decision on August 18, 1994, and June 30, 1995, respectively.

For the program definition and risk reduction phase:

- Ensure that the Navy operational test agency completes an early operational assessment on the potential of the preliminary design to satisfy the requirements of the operational requirements document.\*
- Document the preliminary design in an approved ship specification.\*
- Weight estimate the ship design.
- Estimate the inboard electronics configuration.
- Ensure that the OSD staff review the lead ship design and construction "Request for Proposal" prior to issuance.\*
- Submit a waiver from full-up system level live-fire test and evaluation for approval.\*

For the low-rate initial production decision:

- The independent test organization for the Navy must update the operational assessment.
- The Navy must provide a report that assesses the vulnerability of the ship in accordance with the live-fire test and evaluation plan.
- The Director, Strategic and Tactical Systems, must establish an integrated product team to review the ship and the design maturity of the command, control, communication, and intelligence system to determine their adequacy to proceed with the lead ship construction, and report the results of the review.

**Wide Area Munition.** The Wide Area Munition consists of a basic version and two product improvement program versions. On June 18, 1996, the milestone decision authority established exit criteria for the low-rate initial production decision for the Wide Area Munition-basic, and exit criteria for product improvement program-1 that the milestone decision authority did not stipulate to a specific decision point or acquisition phase.

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\* Exit criteria are not program specific as stated in DoD Regulation 5000.2-R.



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For the basic version low-rate initial production decision:

- Unit cost shall not exceed contract target cost by more than 5 percent.
- Technical test hardware built on production tooling will demonstrate lead times, production processes, production quality, and reliability within 5 percent of predicted learning curves.
- The system performance evaluation will demonstrate that, using mission employment practices, performance specified in the operational requirement document can be achieved.\*

For the product improvement program-1:

- The test program shall demonstrate that the communication, control, and redeployability functions shall be achieved as specified when used in accordance with mission employment practices.
- The production readiness review supports transition to full-rate production and validates production quality and processes.\*

**Wind Corrected Munition Dispenser.** On September 29, 1994, the milestone decision authority established exit criteria for the first low-rate initial production decisions. On August 3, 1998, established exit criteria for the second low-rate initial production decision and for exiting the engineering and manufacturing development phase. On July 20, 1999, the milestone decision authority established exit criteria for the third low-rate initial production decision.

For the first low-rate initial production decision:

- Demonstrate operation from medium-to-high altitude.
- Average unit cost procurement price must be within objectives.

For the second low-rate initial production decision:

- Complete margin and qualification testing.
- Complete end-to-end testing.
- Complete at least one successful flight with pin-puller.

For the third low-rate initial production decision:

- Complete combined developmental and operational tests.
- Complete Block 3A qualification testing.
- Average unit procurement price must be within objectives.

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\* Exit criteria are not program specific as illustrated in DoD Regulation 5000.2-R.

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For the engineering and manufacturing development phase:

- Complete dedicated operational tests on B-52 and F-16 aircraft.
- Meet the acquisition program baseline thresholds.\*
- The contractor must meet full-rate production ramp requirements.
- Achieve average unit procurement price within objectives.
- Submit required documents.\*

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\* Exit criteria are not program specific as illustrated in DoD Regulation 5000.2-R.

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## **Appendix E. Report Distribution**

### **Office of the Secretary of Defense**

Under Secretary of Defense for Acquisition, Technology, and Logistics  
Under Secretary of Defense (Comptroller/Chief Financial Officer)  
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)

### **Department of the Army**

Assistant Secretary of the Army (Acquisition, Logistics, and Technology)  
Program Executive Officer for Command, Control, and Communications  
    Project Manager, Intelligence Fusion  
Program Executive Officer for Tactical Missiles  
    Project Manager for Multiple Launch Rocket System Upgrade  
Deputy for Systems Acquisition, U.S. Army Tank-automotive and Armaments Command  
    Project Manager for Mines, Countermine, and Demolitions  
Auditor General, Department of the Army

### **Department of the Navy**

Assistant Secretary of the Navy (Research, Development, and Acquisition)  
Naval Inspector General  
Program Executive Officer for Submarines  
    Program Manager, VIRGINIA Class Submarine  
Program Executive Officer for Tactical Air Programs  
    Program Manager, Multifunctional Information Distribution System-Low Volume Terminal  
Program Executive Officer for Surface Strike  
    Program Manager, Extended Range Guided Munition  
Auditor General, Department of the Navy

### **Department of the Air Force**

Assistant Secretary of the Air Force (Acquisition)  
Assistant Secretary of the Air Force (Financial Management and Comptroller)  
Program Executive Officer for Airlift, Trainers, Modeling and Simulation  
    Program Manager, National Airspace System  
Program Executive Officer for Space  
    Program Manager, Advanced Extremely High Frequency Program  
Program Executive Officer for Weapons  
    Program Director, Area Attack System Program Office  
Auditor General, Department of the Air Force

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## **Non-Defense Federal Organization**

Office of Management and Budget

## **Congressional Committees and Subcommittees, Chairman and Ranking Minority Member**

Senate Committee on Appropriations

Senate Subcommittee on Defense, Committee on Appropriations

Senate Committee on Armed Services

Senate Committee on Governmental Affairs

House Committee on Appropriations

House Subcommittee on Defense, Committee on Appropriations

House Committee on Armed Services

House Committee on Government Reform

House Subcommittee on Government Management, Information, and Technology, Committee on Government Reform

House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform

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# Deputy For Systems Acquisition, U.S. Army Tank-automotive and Armaments Command Comments



DEPARTMENT OF THE ARMY  
UNITED STATES ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND  
WARREN, MICHIGAN 48397-5000

REPLY TO  
ATTENTION OF

1 DEC 2000

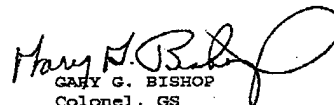
AMSTA-CM-PA (36-2b)

MEMORANDUM FOR Commander, U.S. Army Materiel Command, ATTN: AMCIR-A,  
5001 Eisenhower Avenue, Alexandria, VA 22333-0001

SUBJECT: TACOM Reply to DoDIG Draft Report, Use of Exit Criteria for  
Major Defense Systems (AMC No. D0010)

1. Reference memorandum, HQ AMC, AMCIR-A, 17 October 2000, SAB.
2. In accordance with AR 36-2, we are attaching the TACOM position to the subject draft report. The reply contains additional facts for the auditors' consideration. Also, due to the recent restructuring of the program, we agree that revised exit criteria is needed. Our target date for this revised exit criteria is contained in the reply.
3. The TACOM POC for this audit is Chuck Krulic, DSN 786-6158, or by e-mail at [krulicc@tacom.army.mil](mailto:krulicc@tacom.army.mil).

Atch

  
GARY G. BISHOP  
Colonel, GS  
Chief of Staff

#### **FINDING A: Establishing Program-Specific Exit Criteria**

For eight of the nine programs reviewed, milestone decision authorities did not ensure that the program managers proposed program-specific exit criteria for use at future milestone decision point(s). This condition occurred because:

- The milestone decision authorities for four programs did not enforce the requirement that program managers propose exit criteria for use at future milestone decision point(s), and
- Program managers for eight of the nine programs proposed one or more exit criteria that repeated the minimum requirements for acquisition milestone phases contained in the approved program baseline and DoD Regulation 5000.2-R.

As a result, the milestone decision authorities were limited in their ability to use exit criteria as a management tool to determine whether programs under their review and oversight should progress within an acquisition phase or continue into the next acquisition phase at milestone decision points.

**Additional Facts:** The following comments are offered as clarification to the report:

- (a) The executive summary states that the DSA needs to establish exit criteria. This inappropriately implies that exit criteria did not exist. Request that you modify the summary to reflect your teams assessment that the criteria needs to be updated based on the recently restructured program. The error seems to stem from a conflict between the assessments on pages 6 and 7 of the report stating that criteria was not established, which is in error, and in conflict with the criteria stated in the MDA and referenced on page 25 of the report. This will also require a modification to recommendation A-2 for the same reason.
- (b) The basic WAM is currently in LRIP and there is no intent to go to a full rate production decision. As mentioned in the report, the WAM PIP program is currently being restructured into a single program called the Advanced WAM. Revised exit criteria for entering LRIP and Full Rate Production for the Advanced WAM is currently being developed.

**Recommendation A-2:** We recommend that the Deputy for Systems Acquisition, U.S. Army Tank-automotive and Armaments Command establish exit criteria for the low-rate initial production decision and the engineering and manufacturing development phase for the product improvement programs-1 and -2 of the Wide Area Munition.

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**Action Taken:** Concur. Based on the recent restructure of the program, exit criteria is currently in the process of being revised. Estimated completion date is 19 Jan 01.



# Space And Naval Warfare Systems Command Comments



DEPARTMENT OF THE NAVY  
SPACE AND NAVAL WARFARE SYSTEMS COMMAND  
4301 PACIFIC HIGHWAY  
SAN DIEGO, CA 92116-3127

7500  
Ser 00G/085  
DEC 8 2000

From: Commander, Space and Naval Warfare Systems Command  
To: Department of Defense Office of the Inspector General

Subj: USE OF EXIT CRITERIA FOR MAJOR DEFENSE SYSTEMS (0AE-0121)

Ref: (a) DoDIG Memo of 11 Oct 00  
(b) DoDIG Draft of Proposed Audit Report Dated 11 Oct 00

Encl: (1) Space and Naval Warfare Systems Command (SPAWAR) Comments to Department  
of Defense Office of the Inspector General Draft Audit Report #0AE-0121 "Use of  
Exit Criteria for Major Defense Systems"

1. Per reference (a), comments to the draft report contained in reference (b) are provided in enclosure (1). We do not concur with the audit findings applicable to SPAWAR and our written comments address these findings.

2. Questions regarding this response may be directed to John Gampel, Deputy Inspector General, at (619) 524-7065 or DSN 524-7065, or Margaret Gordon, Audit Liaison point of contact, at (619) 524-7075 or DSN 524-7075.

A handwritten signature in black ink, appearing to read "K. D. Slaght".

K. D. Slaght  
Rear Admiral, U.S. Navy

Space and Naval Warfare Systems Command (SPAWAR)  
Comments to Department of Defense  
Office of the Inspector General Draft Audit Report #0AE-0121  
Use of Exit Criteria for Major Defense Systems

**Draft Report Section – Findings**

**Establishing Program-Specific Exit Criteria**

"For eight of the nine programs reviewed, milestone decision authorities did not ensure that the program managers proposed program-specific exit criteria for use at future milestone decision point(s)."

**1. Appendix D. Exit Criteria Established for Nine Programs Reviewed**

**"Multifunctional Information Distribution System-Low Volume Terminal.**  
On October 5, 1994, the milestone decision authority established these exit criteria for the low-rate initial production decision:

- Close out all critical design review issues.\*
- Complete qualification testing.\*
- Update independent cost estimates.
- Revise the acquisition strategy report.
- Conduct the production readiness review.\*
- Verify the Multifunctional Information Distribution System terminal.
- Conduct a physical configuration audit.\*
- Demonstrate compatibility and interoperability with the Joint Tactical Information Distribution System class-2 terminals.
- Include an early operational assessment of platform interface and operator workload.

\* Exit criteria are not program-specific as stated in DoD Regulation 5000.2-R."

Enclosure (1)

**Comment.**

The nine Multifunctional Information Distribution System (MIDS) exit criteria for entering the low-rate initial production (LRIP), as stated in Appendix D of the audit report, are program specific. Those identified in the audit report as not program-specific are directly related to the program execution. Critical design review issues, completed qualification testing, the production readiness review, and a physical configuration audit are all directly program-specific and provided the milestone decision authority with information to make the appropriate programmatic decision.

**2. Establishing Exit Criteria on the Nine Programs Reviewed**

The table on Page 6 of the report states that the Multifunctional Information Distribution System-Low Volume Terminal (MIDS-LVT) program milestone decision authority did not establish exit criteria for the engineering and manufacturing development phase.

**Comment.**

The MIDS program had nine specific exit criteria for LRIP decision point (April 00) as stated in Appendix D of the audit report. These nine exit criteria were predicated on the successful accomplishment of efforts completed during the Engineering and Manufacturing Development (EMD) phase of the program. The EMD MIDS terminal contractor completed its contractual effort in June 00. A MIDS systems engineering and integration contract is in place to support the EMD platform integration phase of the program. The MIDS program has specific exit criteria tied directly to platform integration testing for LRIP 2 decision point (April 01), as established by the milestone decision authority at the last decision point (LRIP April 00). The program manager is currently coordinating the exit criteria for milestone III (entry into full rate production) with the MIDS Overarching Integrated Product Team (OIPT). The exit criteria resulting from this effort will be submitted to the milestone decision authority for approval.

Enclosure (1)

## **Audit Team Members**

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## INTERNET DOCUMENT INFORMATION FORM

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